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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,319	10/22/2003	Philip D. Nguyen	2003-IP-010380U1	5926

71407 7590 06/05/2009

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EXAMINER	
LIGHTFOOT, ELENA TSOY	
ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
06/05/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/691,319	NGUYEN ET AL.	
	Examiner	Art Unit	
	Elena Tsoy Lightfoot	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-32 and 34-77* is/are pending in the application.

4a) Of the above claim(s) *20-24,27,30,37-41,44,47,50-64 and 67* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18,19,25,26,28,29,31,32,35,36,42,43,45,46,48,49,65,66 and 68-77* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/16/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

Amendment filed on April 15, 2009 has been entered. Claims 18-32, and 35-77 are pending in the application. Claims 28-29 rejoined for examination since they depend now on elected species. Claims 20-24, 27, 30, 37-41, 44, 47, 50-64, and 67 are withdrawn from consideration as being directed to non-elected species.

Claim Objections

Objection to claims 25 and 42 because of the informalities has been withdrawn due to amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 35, 36, 42, 45, 48, 49, 68-70 and 72-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al (US 5,381,864) in view of Beck et al (US 4,493,875), as applied in the previous Office Action, and further in view of Sielcken et al (US 5585524).

Nguyen et al in view of Beck et al is applied here for the same reasons as set forth in paragraph 2 of the Office Action mailed on 1/14/2009.

As to amendment, As discussed in the previous Office Action, Nguyen et al '864 further teaches that the components of the treating composition can be *blended together* using generally ***any* procedure which is commonly used** for preparing fracturing, frac-pack, and gravel packing compositions, e.g. by first mixing the gelling agent with brine or some other aqueous fluid to form the gelled aqueous carrier liquid, transporting the gelled aqueous carrier liquid to a mixing

apparatus such as a ***continuous stream*** tub mixer, and ***continuously*** **adding the other components** and mixing with the gelled aqueous carrier fluid, and continuously drawing the resulting mixture from the mixer and injected the mixture into the well to a desired subterranean zone (See column 12, lines 46-66).

Nguyen et al fails to teach that a continuous process is carried out using a tubular reactor (Claims 35 and 68).

Sielcken et al teaches that a *continuous* process can be carried out using a stirred tank reactor (CSTR), a tubular reactor, a non-stirred bubble column and an internal or external gas-lift loop reactor (See column 5, lines 61-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out a continuous process of Nguyen et al '864 in a continuous stream *tubular* reactor instead of a continuous stream tub mixer since Sielcken et al teaches that a continuous process can be carried out using a CSTR or a tubular reactor.

Note that in the **continuous tubular reactor** the first flowing stream and second flowing stream would be combined and mixed while continuing to flow as a stream, as required by Amendment.

3. Claims 43 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Beck et al, further in view of Sielcken et al '524, as applied above, and further in view of Murphey et al (US 4665988) for the reasons of record set forth in paragraph 3 of the Office Action mailed on 1/14/2009.

4. Claims 45-46 and 75-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Beck et al, further in view of Sielcken et al '524, as applied above, and further in view of McDaniel et al (US 20020048676) for the reasons of record set forth in paragraph 4 of the Office Action mailed on 1/14/2009.

5. Claims 18, 19, 25, 28, 31, 32, 65, 66, 71 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Beck et al, further in view of Sielcken et al '524, as applied above, and further in view of Martin et al (US 4,969,523) for the reasons of record set forth in paragraph 5 of the Office Action mailed on 1/14/2009.

6. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Beck et al, further in view of Sielcken et al '524, and further in view of Martin et al, as applied above, and further in view of Murphey et al '988 for the reasons of record set forth in paragraph 6 of the Office Action mailed on 1/14/2009.

7. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Beck et al, further in view of Sielcken et al '524, and further in view of Martin et al, as applied above, and further in view of McDaniel et al for the reasons of record set forth in paragraph 7 of the Office Action mailed on 1/14/2009.

8. Claims 35, 36, 42, 45, 46, 48, 49, 68-70, 72, 73, 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphey et al (US 5,128,390) in view of McDaniel et al, as applied in the previous Office Action, and further in view of Sielcken et al '524.

Murphey et al (US 5,128,390) in view of McDaniel et al is applied here for the same reasons as set forth in paragraph 8 of the Office Action mailed on 1/14/2009.

As to amendment, As discussed in the previous Office Action, Murphey et al '390 teaches that the method is carried out by preparing an aqueous gelled carrier liquid by combining a gelling agent with the water, conducting a substantially *continuous stream* of the aqueous gelled carrier liquid to a continuous stream mixing tub or the equivalent apparatus, adding a substantially continuous stream of liquid surface active agent, a substantially continuous stream of *particulate* material to the mixing tub as is a substantially continuous stream of premixed liquid polyepoxide resin composition, and withdrawing a substantially *continuous stream of the*

resulting mixture therefrom and **pumping** by way of a conduit system down the well bore into a subterranean zone wherein the resin coated particulate material is deposited and consolidated into a hard permeable mass (See column 8, lines 10-29). Note that Murphey et al '390 teaches that hardenable epoxy resin coats particulate materials such as *sand* or *glass beads* in a treating composition *substantially instantaneously* in the presence of the gelled aqueous carrier liquid and a surface active agent (See column 4, lines 20-26). Obviously, *glass beads* added to the stream comprising resin coated particles would adhere to resin because Murphey et al '390 teaches that the epoxy resin substantially instantaneously coats *glass beads* in the stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have *continuously* formed a composite proppant in the cited prior art by adding a first stream of epoxy resin and dense particles to a **continuous stream** tub mixer thereby forming resin coated large particles followed by adding a second stream of small particles of reduced density with the expectation of providing the desired composite proppant comprising large dense particles coated with small particles of reduced density.

Murphey et al '390 fails to teach that a continuous process is carried out using a tubular reactor (Claims 35 and 68).

Sielcken et al teaches that a *continuous* process can be carried out using a stirred tank reactor (CSTR), a tubular reactor, a non-stirred bubble column and an internal or external gas-lift loop reactor (See column 5, lines 61-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out a continuous process of Murphey et al '390 in a continuous stream *tubular* reactor instead of a continuous stream tub mixer since Sielcken et al teaches that a continuous process can be carried out using a CSTR or a tubular reactor.

Note that in the **continuous tubular reactor** the first flowing stream and second flowing stream would be combined and mixed while continuing to flow as a stream, as required by Amendment.

9. Claims 43 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphey et al '390 in view of McDaniel et al, further in view of Sielcken et al '524, as applied above, and further in view of Murphey et al '988 for the reasons of record set forth in paragraph 9 of the Office Action mailed on 1/14/2009.

10. Claims 18, 19, 25, 28, 29, 31, 32, 71 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphey et al '390 in view of McDaniel et al, further in view of Sielcken et al '524, as applied above, and further in view of Martin et al for the reasons of record set forth in paragraph 10 of the Office Action mailed on 1/14/2009.

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murphey et al '390 in view of McDaniel et al, further in view of Sielcken et al '524, and further in view of Martin et al, as applied above, and further in view of Murphey et al '988 for the reasons of record set forth in paragraph 11 of the Office Action mailed on 1/14/2009.

Response to Arguments

12. Applicant's arguments with respect to claims 18, 19, 25, 26, 28, 29, 31, 32, 35, 36, 42, 43, 45, 46, 48, 49, 65, 66 and 68-77 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1792

June 3, 2009

/Elena Tsoy Lightfoot/